

Serial No.: 10/044,171
Inventor(s): Cates et al.

U.S. PTO Customer No. 25280
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Cates et al.
Serial Number: 10/044,171
Filed: October 22, 2001
For: **Coated Textile Substrate for Image Printing**
Group Art Unit: 1774
Examiner: Grendzynski, Michael E.

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Sir:

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Name: Kerry A. Lawster

Signature: Kerry A. Lawster

AFFIDAVIT BY ELIZABETH CATES

1. My name is Elizabeth Cates and I reside at 330 Rice Planters Lane, Duncan, South Carolina 29334.
2. I am a Senior Development Chemist for Milliken and Company and have been employed by Milliken and Company since September 1997.
3. I have a PhD in Materials Chemistry from Penn. State University, which I received in 1996.
4. I am one of the Inventors of the invention disclosed and claimed US Serial No. 10/044,171, filed on October 22, 2001, titled "Coated Textile Substrate for Image Printing".
5. I have reviewed the European Patent Application No. EP 0 693 587 82, by the Inventor Aoki, published on January 24, 1996, entitled "Ink-Jet Printing Cloth, Ink-Jet Printing Process and Production Process of Print"(hereinafter referred to as "Aoki"). In particular, I have reviewed the water-soluble substances having a hydrophilic group disclosed on page 4, lines 34-42. Each of the substances listed in Aoki is a monomeric or an oligomeric small molecule, which are not polymers. Although the substances

might become solid when they have a higher molecular weight, the solids are not polymers and are recognized in the industry as not being polymers.

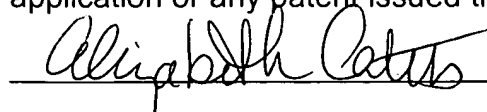
6. I have also reviewed US Patent No. 5,372,884, issued on December 13, 1994, to Abe et al., and titled "Ink Jet Recording Sheet", here and after referred to as Abe. The recording sheet in Abe is either films or sheets (Column 5, lines 7-8), or paper, coated paper, synthetic paper, resin coated paper, pigment containing opaque film and foamed film (See column 5, lines 14-17). There is a fundamental difference in the topology between a textile and paper or film. Paper and film present a two dimensional surface, while a textile presents a fundamentally three dimensional surface. The fibers of a textile create a coarse surface structure relative to paper or films, which creates the three dimensional surface. This topological difference of textiles presents a greater obstacle for achieving a clear quality print than with the relatively flat surface topology of paper or film. Liquids, such as ink, react differently when applied to a two dimensional surface than when applied to a three dimensional surface. For this reason the techniques used to improve print quality on papers or films, cannot be automatically be assumed to have the same effect on textiles, thus, films or papers (as in Abe) are not equivalent to textiles.

7. In addition to the substrate in Abe, I have studied the fluorinated surfactants described in Abe at column 3, line 66 to column 4, line 16. Surfactants, such as disclosed in Abe facilitate wetting of material over a surface as opposed to repulsion. In fact, US Patent No. 3,589,906, referenced by Abe as a surfactant, is directed to surfactants that prevent repellent spots. As such, the surfactants in Abe are not a repellent and are not an equivalent to the repellent finish of the invention claimed in US Serial No. 10/044,171.

8. I have also reviewed US Patent No. 3,589,906, issued to McDowell et al., on June 29, 1971, entitled "Photographic Layers Containing Perfluoro Compounds and Coatings Thereof" (hereinafter referred to as "McDowell"). As described in McDowell, the particular perfluoro carbon compounds of McDowell are a surfactant for the purpose of preventing repelling spots. In column 2, lines 55-64, McDowell specifically states that these surfactants "enhance wetting by an upper layer when multilayer films are coated".

As such, the particular perfluorocarbon compounds are not a repellent finish as claimed in the invention of Serial No. 10/044,171.

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made re punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

 10-23-2003
Elizabeth Cates